



RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/779,050B

DATE: 02/24/2003 P.6

TIME: 13:48:48

Input Set : A:\A-570B.txt

Output Set: N:\CRF4\02242003\I779050B.raw

```

3 <110> APPLICANT: BOYLE, WILLIAM J.
4   HSU, HAILING
6 <120> TITLE OF INVENTION: RECEPTOR FROM TNF FAMILY
8 <130> FILE REFERENCE: A-570B
10 <140> CURRENT APPLICATION NUMBER: 09/779,050B
C--> 11 <141> CURRENT FILING DATE: 2000-02-12
13 <150> PRIOR APPLICATION NUMBER: 60/181,800
14 <151> PRIOR FILING DATE: 2000-02-11
16 <160> NUMBER OF SEQ ID NOS: 52
18 <170> SOFTWARE: PatentIn version 3.1
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 1173
22 <212> TYPE: DNA
23 <213> ORGANISM: Homo sapiens
25 <220> FEATURE:
26 <221> NAME/KEY: CDS
27 <222> LOCATION: (143)..(997)
28 <223> OTHER INFORMATION:
W--> 30 <400> 1
31 gaattcggca cgagctgagg ggtgagccaa gccctgccat gtagtgcacg caggacatca      60
33 acaaacacag ataacaggaa atgatccatt ccctgtggtc acttattcta aaggccccaa      120
35 ccttcaaagt tcaagtagtg at atg gat gac tcc aca gaa agg gag cag tca      172
36                               Met Asp Asp Ser Thr Glu Arg Glu Gln Ser
37                               1           5           10
39 cgc ctt act tct tgc ctt aag aaa aga gaa gaa atg aaa ctg aag gag      220
40 Arg Leu Thr Ser Cys Leu Lys Lys Arg Glu Glu Met Lys Leu Lys Glu
41                               15           20           25
43 tgt gtt tcc atc ctc cca cgg aag gaa agc ccc tct gtc cga tcc tcc      268
44 Cys Val Ser Ile Leu Pro Arg Lys Glu Ser Pro Ser Val Arg Ser Ser
45                               30           35           40
47 aaa gac gga aag ctg ctg gct gca acc ttg ctg ctg gca ctg ctg tct      316
48 Lys Asp Gly Lys Leu Leu Ala Ala Thr Leu Leu Leu Ala Leu Leu Ser
49                               45           50           55
51 tgc tgc ctc acg gtg gtg tct ttc tac cag gtg gcc gcc ctg caa ggg      364
52 Cys Cys Leu Thr Val Val Ser Phe Tyr Gln Val Ala Ala Leu Gln Gly
53                               60           65           70
55 gac ctg gcc agc ctc cgg gca gag ctg cag ggc cac cac gcg gag aag      412
56 Asp Leu Ala Ser Leu Arg Ala Glu Leu Gln Gly His His Ala Glu Lys
57 75                               80           85           90
59 ctg cca gca gga gca gga gcc ccc aag gcc ggc ctg gag gaa gct cca      460
60 Leu Pro Ala Gly Ala Gly Ala Pro Lys Ala Gly Leu Glu Glu Ala Pro
61                               95           100          105
63 gct gtc acc gcg gga ctg aaa atc ttt gaa cca cca gct cca gga gaa      508

```

RAW SEQUENCE LISTING

DATE: 02/24/2003

PATENT APPLICATION: US/09/779,050B

TIME: 13:48:48

Input Set : A:\A-570B.txt

Output Set: N:\CRF4\02242003\I779050B.raw

```

64 Ala Val Thr Ala Gly Leu Lys Ile Phe Glu Pro Pro Ala Pro Gly Glu
65          110          115          120
67 ggc aac tcc agt cag aac agc aga aat aag cgt gcc gtt cag ggt cca      556
68 Gly Asn Ser Ser Gln Asn Ser Arg Asn Lys Arg Ala Val Gln Gly Pro
69          125          130          135
71 gaa gaa aca gtc act caa gac tgc ttg caa ctg att gca gac agt gaa      604
72 Glu Glu Thr Val Thr Gln Asp Cys Leu Gln Leu Ile Ala Asp Ser Glu
73          140          145          150
75 aca cca act ata caa aaa gga tct tac aca ttt gtt cca tgg ctt ctc      652
76 Thr Pro Thr Ile Gln Lys Gly Ser Tyr Thr Phe Val Pro Trp Leu Leu
77 155          160          165          170
79 agc ttt aaa agg gga agt gcc cta gaa gaa aaa gag aat aaa ata ttg      700
80 Ser Phe Lys Arg Gly Ser Ala Leu Glu Glu Lys Glu Asn Lys Ile Leu
81          175          180          185
83 gtc aaa gaa act ggt tac ttt ttt ata tat ggt cag gtt tta tat act      748
84 Val Lys Glu Thr Gly Tyr Phe Phe Ile Tyr Gly Gln Val Leu Tyr Thr
85          190          195          200
87 gat aag acc tac gcc atg gga cat cta att cag agg aag aag gtc cat      796
88 Asp Lys Thr Tyr Ala Met Gly His Leu Ile Gln Arg Lys Lys Val His
89          205          210          215
91 gtc ttt ggg gat gaa ttg agt ctg gtg act ttg ttt cga tgt att caa      844
92 Val Phe Gly Asp Glu Leu Ser Leu Val Thr Leu Phe Arg Cys Ile Gln
93          220          225          230
95 aat atg cct gaa aca cta ccc aat aat tcc tgc tat tca gct ggc att      892
96 Asn Met Pro Glu Thr Leu Pro Asn Asn Ser Cys Tyr Ser Ala Gly Ile
97 235          240          245          250
99 gca aaa ctg gaa gaa gga gat gaa ctc caa ctt gca ata cca aga gaa      940
100 Ala Lys Leu Glu Glu Gly Asp Glu Leu Gln Leu Ala Ile Pro Arg Glu
101          255          260          265
103 aat gca caa ata tca ctg gat gga gat gtc aca ttt ttt ggt gca ttg      988
104 Asn Ala Gln Ile Ser Leu Asp Gly Asp Val Thr Phe Phe Gly Ala Leu
105          270          275          280
107 aaa ctg ctg tgacctactt acaccatgtc tgtagctatt ttcttcctt      1037
108 Lys Leu Leu
109          285
111 tctctgtacc tctaagaaga aagaatctaa ctgaaaatac caaaaaaaaaa aaaaaaaaaa      1097
113 aaaaaaaaaagt agttaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa      1157
115 aaaaactcgg aggggg      1173
118 <210> SEQ ID NO: 2
119 <211> LENGTH: 285
120 <212> TYPE: PRT
121 <213> ORGANISM: Homo sapiens
123 <400> SEQUENCE: 2
125 Met Asp Asp Ser Thr Glu Arg Glu Gln Ser Arg Leu Thr Ser Cys Leu
126 1          5          10          15
129 Lys Lys Arg Glu Glu Met Lys Leu Lys Glu Cys Val Ser Ile Leu Pro
130          20          25          30
133 Arg Lys Glu Ser Pro Ser Val Arg Ser Ser Lys Asp Gly Lys Leu Leu
134          35          40          45

```

RAW SEQUENCE LISTING

DATE: 02/24/2003

PATENT APPLICATION: US/09/779,050B

TIME: 13:48:48

Input Set : A:\A-570B.txt

Output Set: N:\CRF4\02242003\I779050B.raw

```

137 Ala Ala Thr Leu Leu Leu Ala Leu Leu Ser Cys Cys Leu Thr Val Val
138      50                      55                      60
141 Ser Phe Tyr Gln Val Ala Ala Leu Gln Gly Asp Leu Ala Ser Leu Arg
142 65                      70                      75                      80
145 Ala Glu Leu Gln Gly His His Ala Glu Lys Leu Pro Ala Gly Ala Gly
146                      85                      90                      95
149 Ala Pro Lys Ala Gly Leu Glu Glu Ala Pro Ala Val Thr Ala Gly Leu
150                      100                      105                      110
153 Lys Ile Phe Glu Pro Pro Ala Pro Gly Glu Gly Asn Ser Ser Gln Asn
154                      115                      120                      125
157 Ser Arg Asn Lys Arg Ala Val Gln Gly Pro Glu Glu Thr Val Thr Gln
158                      130                      135                      140
161 Asp Cys Leu Gln Leu Ile Ala Asp Ser Glu Thr Pro Thr Ile Gln Lys
162 145                      150                      155                      160
165 Gly Ser Tyr Thr Phe Val Pro Trp Leu Leu Ser Phe Lys Arg Gly Ser
166                      165                      170                      175
169 Ala Leu Glu Glu Lys Glu Asn Lys Ile Leu Val Lys Glu Thr Gly Tyr
170                      180                      185                      190
173 Phe Phe Ile Tyr Gly Gln Val Leu Tyr Thr Asp Lys Thr Tyr Ala Met
174                      195                      200                      205
177 Gly His Leu Ile Gln Arg Lys Lys Val His Val Phe Gly Asp Glu Leu
178                      210                      215                      220
181 Ser Leu Val Thr Leu Phe Arg Cys Ile Gln Asn Met Pro Glu Thr Leu
182 225                      230                      235                      240
185 Pro Asn Asn Ser Cys Tyr Ser Ala Gly Ile Ala Lys Leu Glu Glu Gly
186                      245                      250                      255
189 Asp Glu Leu Gln Leu Ala Ile Pro Arg Glu Asn Ala Gln Ile Ser Leu
190                      260                      265                      270
193 Asp Gly Asp Val Thr Phe Phe Gly Ala Leu Lys Leu Leu
194                      275                      280                      285

```

197 <210> SEQ ID NO: 3

198 <211> LENGTH: 1139

199 <212> TYPE: DNA

200 <213> ORGANISM: Mus musculus

202 <220> FEATURE:

203 <221> NAME/KEY: CDS

204 <222> LOCATION: (52)..(978)

205 <223> OTHER INFORMATION:

W--> 207 <400> 3

```

208 gaattcggca cgagctccaa aggcctagac cttcaaagtg ctctcgtgg a atg gat      57
209                                     Met Asp
210                                     1
212 gag tct gca aag acc ctg cca cca ccg tgc ctc tgt ttt tgc tcc gag      105
213 Glu Ser Ala Lys Thr Leu Pro Pro Cys Leu Cys Phe Cys Ser Glu
214      5                      10                      15
216 aaa gga gaa gat atg aaa gtg gga tat gat ccc atc act ccg cag aag      153
217 Lys Gly Glu Asp Met Lys Val Gly Tyr Asp Pro Ile Thr Pro Gln Lys
218      20                      25                      30
220 gag gag ggt gcc tgg ttt ggg atc tgc agg gat gga agg ctg ctg gct      201

```

RAW SEQUENCE LISTING

DATE: 02/24/2003

PATENT APPLICATION: US/09/779,050B

TIME: 13:48:48

Input Set : A:\A-570B.txt

Output Set: N:\CRF4\02242003\I779050B.raw

221	Glu	Glu	Gly	Ala	Trp	Phe	Gly	Ile	Cys	Arg	Asp	Gly	Arg	Leu	Leu	Ala	
222	35					40					45					50	
224	gct	acc	ctc	ctg	ctg	gcc	ctg	ttg	tcc	agc	agt	ttc	aca	gcg	atg	tcc	249
225	Ala	Thr	Leu	Leu	Leu	Ala	Leu	Leu	Ser	Ser	Ser	Phe	Thr	Ala	Met	Ser	
226					55					60					65		
228	ttg	tac	cag	ttg	gct	gcc	ttg	caa	gca	gac	ctg	atg	aac	ctg	cgc	atg	297
229	Leu	Tyr	Gln	Leu	Ala	Ala	Leu	Gln	Ala	Asp	Leu	Met	Asn	Leu	Arg	Met	
230				70					75					80			
232	gag	ctg	cag	agc	tac	cga	ggt	tca	gca	aca	cca	gcc	gcc	gcg	ggt	gct	345
233	Glu	Leu	Gln	Ser	Tyr	Arg	Gly	Ser	Ala	Thr	Pro	Ala	Ala	Ala	Gly	Ala	
234			85					90					95				
236	cca	gag	ttg	acc	gct	gga	gtc	aaa	ctc	ctg	aca	ccg	gca	gct	cct	cga	393
237	Pro	Glu	Leu	Thr	Ala	Gly	Val	Lys	Leu	Leu	Thr	Pro	Ala	Ala	Pro	Arg	
238		100					105					110					
240	ccc	cac	aac	tcc	agc	cgc	ggc	cac	agg	aac	aga	cgc	gct	ttc	cag	gga	441
241	Pro	His	Asn	Ser	Ser	Arg	Gly	His	Arg	Asn	Arg	Arg	Ala	Phe	Gln	Gly	
242	115					120					125				130		
244	cca	gag	gaa	aca	gaa	caa	gat	gta	gac	ctc	tca	gct	cct	cct	gca	cca	489
245	Pro	Glu	Glu	Thr	Glu	Gln	Asp	Val	Asp	Leu	Ser	Ala	Pro	Pro	Ala	Pro	
246					135					140					145		
248	tgc	ctg	cct	gga	tgc	cgc	cat	tct	caa	cat	gat	gat	aat	gga	atg	aac	537
249	Cys	Leu	Pro	Gly	Cys	Arg	His	Ser	Gln	His	Asp	Asp	Asn	Gly	Met	Asn	
250				150					155					160			
252	ctc	aga	aac	atc	att	caa	gac	tgt	ctg	cag	ctg	att	gca	gac	agc	gac	585
253	Leu	Arg	Asn	Ile	Ile	Gln	Asp	Cys	Leu	Gln	Leu	Ile	Ala	Asp	Ser	Asp	
254			165					170					175				
256	acg	ccg	act	ata	cga	aaa	gga	act	tac	aca	ttt	gtt	cca	tgg	ctt	ctc	633
257	Thr	Pro	Thr	Ile	Arg	Lys	Gly	Thr	Tyr	Thr	Phe	Val	Pro	Trp	Leu	Leu	
258		180					185					190					
260	agc	ttt	aaa	aga	gga	aat	gcc	ttg	gag	gag	aaa	gag	aac	aaa	ata	gtg	681
261	Ser	Phe	Lys	Arg	Gly	Asn	Ala	Leu	Glu	Glu	Lys	Glu	Asn	Lys	Ile	Val	
262	195					200					205				210		
264	gtg	agg	caa	aca	ggc	tat	ttc	ttc	atc	tac	agc	cag	gtt	cta	tac	acg	729
265	Val	Arg	Gln	Thr	Gly	Tyr	Phe	Phe	Ile	Tyr	Ser	Gln	Val	Leu	Tyr	Thr	
266					215					220					225		
268	gac	ccc	atc	ttt	gct	atg	ggt	cat	gtc	atc	cag	agg	aag	aaa	gta	cac	777
269	Asp	Pro	Ile	Phe	Ala	Met	Gly	His	Val	Ile	Gln	Arg	Lys	Lys	Val	His	
270				230					235					240			
272	gtc	ttt	ggg	gac	gag	ctg	agc	ctg	gtg	acc	ctg	ttc	cga	tgt	att	cag	825
273	Val	Phe	Gly	Asp	Glu	Leu	Ser	Leu	Val	Thr	Leu	Phe	Arg	Cys	Ile	Gln	
274			245					250					255				
276	aat	atg	ccc	aaa	aca	ctg	ccc	aac	aat	tcc	tgc	tac	ttg	gct	ggc	atc	873
277	Asn	Met	Pro	Lys	Thr	Leu	Pro	Asn	Asn	Ser	Cys	Tyr	Leu	Ala	Gly	Ile	
278		260						265					270				
280	gcg	agg	ctg	gaa	gaa	gga	gat	gag	att	cag	ctt	gca	att	cct	cgg	gag	921
281	Ala	Arg	Leu	Glu	Glu	Gly	Asp	Glu	Ile	Gln	Leu	Ala	Ile	Pro	Arg	Glu	
282	275					280					285				290		
284	aat	gca	cag	att	tca	cgc	aac	gga	gac	gac	acc	ttc	ttt	ggt	gcc	cta	969
285	Asn	Ala	Gln	Ile	Ser	Arg	Asn	Gly	Asp	Asp	Thr	Phe	Phe	Gly	Ala	Leu	

RAW SEQUENCE LISTING

DATE: 02/24/2003

PATENT APPLICATION: US/09/779,050B

TIME: 13:48:48

Input Set : A:\A-570B.txt

Output Set: N:\CRF4\02242003\I779050B.raw

```

286          295          300          305
288 aaa ctg ctg taactcactt gctggagtgct gtgatccct tccctcgtct 1018
289 Lys Leu Leu
292 tctctgtacc tccgagggag aaacagacga ctggaaaaat aaaagatggg gaaagccgtc 1078
294 agcgaaagtt ttctcgtgac ccgttgaatc tgatccaaac caggaaatat aacagacagc 1138
296 c 1139
299 <210> SEQ ID NO: 4
300 <211> LENGTH: 309
301 <212> TYPE: PRT
302 <213> ORGANISM: Mus musculus
304 <400> SEQUENCE: 4
306 Met Asp Glu Ser Ala Lys Thr Leu Pro Pro Pro Cys Leu Cys Phe Cys
307 1 5 10 15
310 Ser Glu Lys Gly Glu Asp Met Lys Val Gly Tyr Asp Pro Ile Thr Pro
311 20 25 30
314 Gln Lys Glu Glu Gly Ala Trp Phe Gly Ile Cys Arg Asp Gly Arg Leu
315 35 40 45
318 Leu Ala Ala Thr Leu Leu Leu Ala Leu Leu Ser Ser Ser Phe Thr Ala
319 50 55 60
322 Met Ser Leu Tyr Gln Leu Ala Ala Leu Gln Ala Asp Leu Met Asn Leu
323 65 70 75 80
326 Arg Met Glu Leu Gln Ser Tyr Arg Gly Ser Ala Thr Pro Ala Ala Ala
327 85 90 95
330 Gly Ala Pro Glu Leu Thr Ala Gly Val Lys Leu Leu Thr Pro Ala Ala
331 100 105 110
334 Pro Arg Pro His Asn Ser Ser Arg Gly His Arg Asn Arg Arg Ala Phe
335 115 120 125
338 Gln Gly Pro Glu Glu Thr Glu Gln Asp Val Asp Leu Ser Ala Pro Pro
339 130 135 140
342 Ala Pro Cys Leu Pro Gly Cys Arg His Ser Gln His Asp Asp Asn Gly
343 145 150 155 160
346 Met Asn Leu Arg Asn Ile Ile Gln Asp Cys Leu Gln Leu Ile Ala Asp
347 165 170 175
350 Ser Asp Thr Pro Thr Ile Arg Lys Gly Thr Tyr Thr Phe Val Pro Trp
351 180 185 190
354 Leu Leu Ser Phe Lys Arg Gly Asn Ala Leu Glu Glu Lys Glu Asn Lys
355 195 200 205
358 Ile Val Val Arg Gln Thr Gly Tyr Phe Phe Ile Tyr Ser Gln Val Leu
359 210 215 220
362 Tyr Thr Asp Pro Ile Phe Ala Met Gly His Val Ile Gln Arg Lys Lys
363 225 230 235 240
366 Val His Val Phe Gly Asp Glu Leu Ser Leu Val Thr Leu Phe Arg Cys
367 245 250 255
370 Ile Gln Asn Met Pro Lys Thr Leu Pro Asn Asn Ser Cys Tyr Leu Ala
371 260 265 270
374 Gly Ile Ala Arg Leu Glu Glu Gly Asp Glu Ile Gln Leu Ala Ile Pro
375 275 280 285
378 Arg Glu Asn Ala Gln Ile Ser Arg Asn Gly Asp Asp Thr Phe Phe Gly
379 290 295 300

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/779,050B

DATE: 02/24/2003
 TIME: 13:48:49

Input Set : A:\A-570B.txt
 Output Set: N:\CRF4\02242003\I779050B.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:5; Xaa Pos. 3,5,6,7,8,9,10,11,12,14,15,17,18,20,22,25,26,27,28,29,30
 Seq#:5; Xaa Pos. 31,32,33,34,35,37,38,39,40,41,42,43,44,47,60,61,62,64,65
 Seq#:5; Xaa Pos. 67,70,75,78,79,82,86,87,88,89,90,91,92,95,100,101,105,107
 Seq#:5; Xaa Pos. 108,109,111,114,115,116,120,121,122,125,128,135,136,147
 Seq#:5; Xaa Pos. 152,155,179,181,182,190,197,198,199,204,231,245,252,265
 Seq#:5; Xaa Pos. 266,269
 Seq#:6; Xaa Pos. 1,8,10,12,15,18,21,23,25,29,39,41,44,47,49,51,53,55,57,60
 Seq#:6; Xaa Pos. 64,66,68,70,72,79,81,84,90,92,94
 Seq#:25; Xaa Pos. 11,16,19
 Seq#:26; Xaa Pos. 5
 Seq#:27; Xaa Pos. 11,16,19,33,43,45,46,54,61,62,63,68,95,109,116,129,130
 Seq#:27; Xaa Pos. 133

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:5; Line(s) 393,394
 Seq#:6; Line(s) 479
 Seq#:27; Line(s) 1405

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:25,26,27

VERIFICATION SUMMARY

DATE: 02/24/2003

PATENT APPLICATION: US/09/779,050B

TIME: 13:48:49

Input Set : A:\A-570B.txt

Output Set: N:\CRF4\02242003\I779050B.raw

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:30 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:28
L:207 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:205
L:400 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
M:341 Repeated in SeqNo=5
L:485 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
M:341 Repeated in SeqNo=6
L:1363 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
M:341 Repeated in SeqNo=25
L:1387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
L:1411 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
M:341 Repeated in SeqNo=27
L:1620 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:41,Line#:1618